

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Reserve

aSB951

.4

.W5

PATC

AD-83 Bookplate
(1-48)

NATIONAL

**A
G
R
I
C
U
L
T
U
R
A
L**



LIBRARY

Hand Application Methods For Commonly Used Forestry Herbicides In The South



TRAINING MATERIAL

Prepared by:

Max Williamson, Regional Pesticide Specialist
USDA Forest Service
1720 Peachtree Road, N.W.
Atlanta, Georgia 30367
Phone - FTS 257-2229
Commercial - (404) 347-2229

James H. Miller, Research
USDA Forest Service
Southern Forest Experiment Station
Devall Street
Auburn University, Alabama 36849
Phone - FTS 534-4504
Commercial - (404) 826-8700



April 1987

INTRODUCTION

This document was prepared for use by employees of the Forest Service's Southern Region, but may be applicable for others as well. The instructions pertain to the application of forestry herbicides by hand methods: 1) basal bark, 2) soil spot, 3) cut surface, 4) directed foliar spray, and 5) herbaceous weed control. A section on personal safety items is also included.

The primary hand spraying system is the Model 30 Gunjet attached to a backpack spray unit. The Gunjet with the recommended spraying tips are available from Spraying Systems, page 12 or their dealers. The backpack sprayers, such as Solo Model 475, are available from forestry supply firms. (To simplify mixing, place permanent marks at the 1, 2, 3, etc. gallon level on the spray tank.)

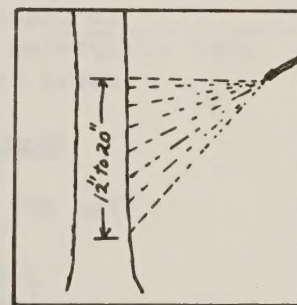
The backpack sprayer should have a diaphragm pump. Diaphragm pumps are recommended because they are not as prone to leak as the piston pumps, operate at lower pressures and over a more narrow range of pressure. For accurate application, maintain the sprayer pressure within 20 to 40 pounds per square inch (psi). Normal pumping of a diaphragm pump backpack sprayer will maintain this pressure range.

BASAL APPLICATIONS

1. Full Basal

Full basal treatments are usually applied to stems up to 6 inches in diameter; some herbicide labels do not limit the diameter. The lower 12 to 20 inches of the stem should be completely wet with spray mixture on all sides.

The herbicide mixture is usually applied with a backpack sprayer such as the Solo Model 475, and a spray gun or a spray wand with a narrow angle flat fan spray tip or an adjustable spray tip. If you use the Model 30 Gunjet with a TP 1503 (flat spray fan tip), orient the tip in the Gunjet with the fan angle parallel to the tree trunk. The tip should spray a 12 to 20-inch vertical band on the trunk, which can be done at a fair distance from the tree.



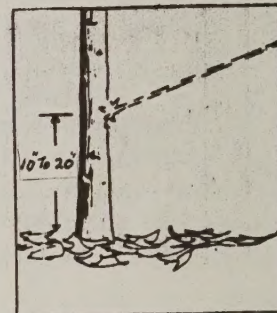
FULL BASAL

Some of the commonly used herbicides in the South which are applied mixed with diesel fuel, are 2,4-D esters, Garlon 4, Weedone 2,4-DP, and Weedone CB ready-to-apply herbicide. Always check the product label for labeled uses and rates, hazards, directions, precautions, etc.

Basal applications are usually applied during the hardwood dormant season, although some applications are made during leaf on. Volatilization of the oil-mixed combinations on hot summer days may injure small pines.

2. Thinline (Streamline) Basal

Apply thinline basal treatments to juvenile stems less than 3 inches in diameter at breast height (d.b.h.). The application is usually made during the dormant season. Apply the mixture in a 1-1/2 to 2 inch band to one side, in a back-and-forth swinging motion, to all target stems about 10 to 20 inches above the base of the plant. An hour or more after application, the wet treated area on the stem should have spread 6 to 10 inches down the stem and should completely, or almost completely, circle the stem. Stems that are beyond the juvenile stage, heavy barked, or near 3 inches in diameter may require treatment on both sides of the stem.



Thinline

The usual method of application is with a diaphragm pump backpack sprayer, equipped with a Model 30 Gunjet and a TP-0002 tip. The Gunjet may also be used with most other spray units that produce a pressure of 20 to 40 psi.

The following directions are for the use of the unit with the herbicide, Garlon 4, mixed with Cide Kick¹ and diesel fuel. The most common mixture is 20 percent Garlon 4, 10 percent Cide Kick, and 70 percent diesel fuel. The percentage of Garlon 4 is sometimes increased or more of the above mixture applied for hard to kill species such as mountain laurel, rhododendron, blackgum, sourwood and sweet bay.

Mixtures for Thinline Basal Application with Garlon 4

For 20% Garlon 4 Mixtures:

1-gallon mixture:

Add 25 ounces, or 1-1/2 pints, of Garlon 4;
Add 13 ounces, or 3/4 pint, of Cide Kick adjuvant;
Then fill the container to the 1-gallon mark with diesel fuel.

2-gallon mixture:

Add 50 ounces, or 3 pints, of Garlon 4;
Add 26 ounces, or 1-1/2 pints, of Cide Kick;
Then fill the container to the 2-gallon mark with diesel fuel.

¹ Other penetrants/wetting agents (adjuvants) which mix readily with oil may be used.

3-gallon mixture:

Add 75 oz., or 4-1/2 pints of Garlon 4;

Add 39 oz., or 2-1/4 pints of Cide Kick;

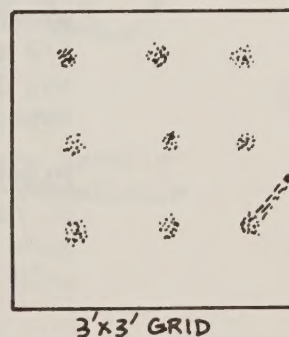
Then fill the container to the 3-gallon mark with diesel fuel.

SOIL SPOT APPLICATIONS

Velpar L hand applications are commonly made as spot grid or single stem treatment for site preparation or pine release. The application rate depends on soil texture and the species you wish to control. Less of this herbicide is used on sandy soils; more on clay soils or soils with a high content of organic matter. Higher rates are required for species such as hickory, dogwood, maple, ash, sassafras and blackgum, especially on soils with a high organic matter content. Velpar L provides practically no control of yellow poplar, mountain laurel, huckleberry, large cull pines, etc.

1. Spot Grid Application

One commonly used pattern is the 3 X 3 foot grid with 1 milliliter (ml) undiluted Velpar-L or equivalent applied per spot. (See paragraph on dilution). The dimensions of the grid can be changed for each situation. Generally, a close grid pattern is used when the hardwood competition is small. A wider pattern is used when hardwoods are large. For example, to control mainly 6 to 8-inch d.b.h. trees, a wide (6 X 6 foot) spot grid is usually satisfactory. Under those conditions one may need to increase the amount of herbicide per spot from 1 ml concentrate per spot to 2 ml per spot. If the area to be treated contains both small and large species, use a close grid to control both sizes (A 3 x 3 foot grid). Regardless of the spot-grid spacing, the gallons of herbicide per acre should remain about the same based on equivalent soil, and species to be controlled, etc.



3'x3' GRID

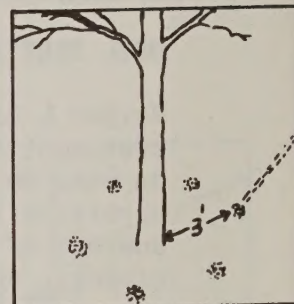
The spot-grid method is used for both site preparation and pine release. The lower rates used for release generally provide less competition control, with some regrowth possible, but, even so, pine release is usually satisfactory. For pine release Velpar L can be successfully used to control hardwoods in the first year (beginning of the growing season), of the first year, or after the pines are 3-4 years of age. Jack pine and white pine are quite sensitive to Velpar L.

The Velpar L spots should not be placed within 3 feet of first year pines or directly upslope from the pine seedlings.

When handling or applying Velpar L, always wear safety glasses, gloves, and check the product label for other safety precautions.

2. Single Stem Application

Apply 2 to 4 ml of undiluted Velpar-L in 1-ml spots, per 1 inch stem diameter at breast height (dbh). The higher rate is needed for most situations other than for sandy soils. Direct the nozzle at the soil within 3 feet of the root collar of the unwanted species. When more than one spot is needed per stem, apply the herbicide evenly spaced around the stem.



3. Dilution

You may dilute Velpar L with water for spot application as shown below. A dilution of 1 part Velpar L herbicide with 1 part water (1 to 1) requires a 2-ml spot to equal 1 ml of the concentrate from the herbicide container. A dilution of 1 to 2 will require a 3-ml spot to equal 1 ml of the concentrate, etc. Dilution reduces the hazard (especially the flammability) of the chemical for the user, and reduces the chance of error. As an example, if a 1-ml spot of concentrate is applied and a variation of 1/2 ml occurs, the application rate is changed by 50 percent. When the 3-ml dilutions are applied, a variation of 1/2 ml only changes the application rate about 17 percent.

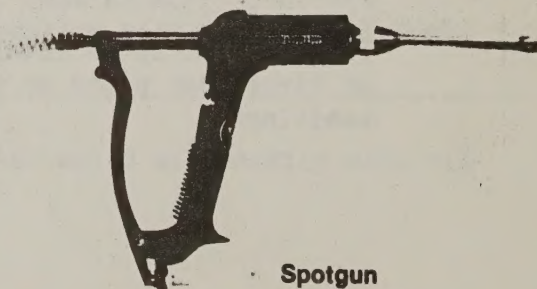
CAUTION

Do not allow a dilution of Velpar L, at less than 5 to 1, to stand for more than 4 hours, as crystals may form in the solution, especially in cold weather.

4. Type of Applicators

Spotgun.

This unit has an adjustable graduated cylinder operated by the pull of a trigger. It is usually purchased along with a 5-liter backpack container for carrying the herbicide. Two basic models are available. Plastic spotguns are less expensive, and not very durable. These units are available from most forestry suppliers. Also, a disposable spotgun has recently been marketed.



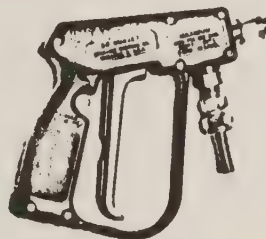
Spotgun
Applicator

Calibration of Spotgun

These units are exact delivery devices. Set the indicator on the desired delivery rate, for example 1 ml. Get a measuring cup graduated in milliliters. Pull the trigger 10 times collecting the liquid in the cup. If the cup contains more or less than 10 ml, adjust accordingly and repeat the above procedure. If the unit is set on 2 ml, the cup should contain 20 ml after 10 pulls of the trigger.

Model 30 Gunjet

Attach the Gunjet to a pressurized spray unit such as the Model 475 Solo backpack unit. The Gunjet can apply single 1, 2, or 3 ml spots, or multiple spots with a single pull of the trigger depending on the spray tip. A TP 0001 can apply 1 ml spots, a TP 0002 2 ml spots, TP 0003 3 ml spots. A TP15457-3-031 tip applies three spots, up to 2 ml each spot, with one pull of the handle. The volume of the spot is also determined by the timing of the handle pull. Although this is not an exact delivery device, very accurate dosages can be applied with practice and calibration. Backpack units are capable of carrying large quantities of herbicide, and are usually preferred by custom applicators. The Gunjet and tips are available from Spraying Systems Company or their dealers.



Calibration of Gunjet

- a. Install the appropriate tip for the desired spot: TP 0001 for 1 ml spots (not recommended; too sensitive in field work). TP 0002 for 2 ml spots, TP 0003 for 3 ml spots, etc.
- b. Fill the spray unit one-fourth full with water and pump it up. Keep the spray unit pumped up during application.
- c. Pull the Gunjet handle a few times. Note the clicking noise -- it helps you judge the rate of the opening and closing of the handle.
- d. Secure a cylinder or cup graduated in milliliters(ml), with a capacity of at least 40 ml.
- e. Place the tip of Gunjet into the graduated cup or cylinder. Pull and release the handle 10 times at the actual application rate.
- f. If you use part no. TP 0002 for the gun tip expect 20 ml of water. If the gun discharges any other quantity, change the timing of

your pull and release until you get 20 ml for the 10 pulls. You will then be putting out 2-ml spots. If you use part no. TP 0001 for the tip, for 1-ml spots, pull and release the handle 10 times until you get 10 ml for the 10 pulls. You will then be putting out 1-ml spots. Tip TP 0003 will release 3-ml spots when calibrated as above.

Calibration should be checked once or twice daily.

Marking Treated Areas

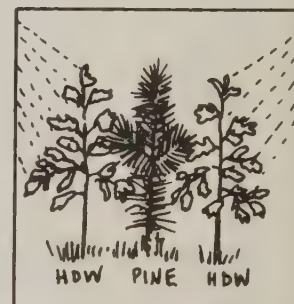
Water-soluble dyes are available for marking the spots. Blue or other brilliant colors provide the highest visibility. Surveyor's flagging or tissue paper can be used to define the treated areas.

Note: Applicators usually require more maintenance, especially cleaning, when dyes are used.

DIRECTED FOLIAR SPRAY APPLICATIONS

This technique is primarily for release of 1st and 2nd year conifer stands when hardwood competition is less than 6 feet tall. Caution must be taken to direct the spray away from the pine foliage.

Herbicide is usually applied with a backpack sprayer and a hand spray gun using a flat spray-tip or an adjustable spray tip. Most contractors prefer the flat, nonadjustable spray tip so that the on-ground applicators cannot adjust them. A commonly used application setup is a Solo Model 475 diaphragm pump backpack unit, Model 30 Gunjet, with TP 2503 tip. Some commonly used herbicides are Garlon 3A, Garlon 4 Roundup, and Weedone 2,4-DP². Always check the product label for specific rates, uses, hazards, directions, precautions, etc.



DIRECT SPRAY

Current recommended rates and application periods for the South are:

<u>Herbicide</u>	<u>Percent Mixture in Water</u>	<u>Application Period</u>
Garlon 3A	2-5 percent	April - October
Garlon 4	2-4 percent	April - October
Roundup	2-4 percent	August - October
Weedone 2,4-DP ²	4 percent	April - early June

²This usage is covered in a supplemental bulletin which must be in the possession of the user at the time of application.

Early season application should be made after full-leaf of the species to be controlled. Late season application should be before fall color appears.

Garlon 4 appears to provide better control than Garlon 3A, especially on red maples, hickory, dogwoods, ash and some of the waxy leaf brush species, but can cause damage to young pine in extremely hot weather.

Weedone 2,4-DP doesn't appear to provide control of red maple, ash, dogwood and some of the waxy leaf brush species; also blackgum, water and willow oak and hophornbeam are not usually well controlled.

To apply direct the spray onto the target foliage, being sure to cover the growing tips, but keep it off the conifer foliage. Do NOT directly spray the conifers; it may kill or injure them.

Lower percentage herbicide mixtures (1-2%) require heavy foliage wetting, and most of the target foliage must be covered. Higher-percentage herbicide mixtures (3-4%) require less wetting and coverage. When using the lower-percentage herbicide mixture, spray the foliage nearly to the point of leaf runoff, covering at least 80 percent of the foliage. Higher-percentage herbicide mixture needs only about two to three droplets per leaf on about 70 percent of the target foliage. The growing tips must always be sprayed.

An exception to the above is Weedone 2,4-DP in which case the foliage should be thoroughly covered just short of leaf runoff.

HERBACEOUS WEED CONTROL

Apply the spray mixture directly over the tops of the pines to control the competing weeds and grasses. With hand applicators, apply the spray in a 4 to 5 foot square or circle with the pine in the center. The herbicides that are registered are applied at low rates over first or second year pines. Application on first year pines can not only accelerate tree growth, but increase pine seedling survival, especially when weed and grass competition is heavy and moisture is low.



HERBACEOUS
WEED CONTROL

Herbicides are usually applied in March through June in the South. The competing vegetation should be fully leaved and growing. For best results, treat the competing vegetation before it heavily shades and competes with the pines.

The usual method of application is with a diaphragm pump backpack sprayer, Model 30 Gunjet, and a TP 8004LP tip or TP 8004E tip if heavy spray edges are desired. Hold the gun about 2-1/2 feet above the ground to produce a 4-foot band. At a normal pace a person will usually apply about 12 to 16 gallons of mixture per gross acre.

Some of the commonly used herbicides in the South are Oust, Oust + Velpar L, and Oust + Roundup. Always check the product label for specific uses, hazards, directions, precautions, etc. Fairly accurate calibration of the spray equipment is required because at high rates these herbicides can injure or kill pine seedlings.

Current Recommended Rates and Application Periods for the South

<u>Herbicide</u>	<u>Rates per Gross Acre</u>	<u>Application Period</u>
Oust	2 to 5 ozs.	March to mid-May
Oust + Velpar L	2-3 ozs. + 1 qt.	March to mid-May
Oust + Roundup	2-4 ozs. + 1 pt.	April to June

For broadleaf weeds, Oust alone should give good control and works best when applied in March. Oust can be applied before the weeds appear acting as a pre-emergent herbicide. Velpar L or Roundup can be added for a broader control spectrum, especially for grasses such as broomsedge and bermuda. The Roundup addition tends to give better control of broomsedge. As of September 1986 the Oust plus Roundup mixture is registered for release of only certain pine species, check the label.

Calibration

- a. Install the appropriate tip.
- b. Fill the spray unit with water and pump up the spray unit. Keep it pumped up during application.
- c. Hold the hand gun at carrying height, about 2-1/2 feet above the ground and spray a band on the ground. Measure the spray width of the band.
- d. From the table below, find the spray width that is closest to your spray width. To the right and on the same line will be the calibration distance.
- e. Measure the calibration distance on the ground. Then walk this distance at a rate you will be walking when applying the spray, and note the time.
- f. For the amount of time, from above step, spray from the nozzle into a container graduated in ounces, or pour the collected spray into a container graduated in ounces.
- g. The ounces collected will equal the spray rate in gallons per acre.

Spray Width and Distance Figures for Use in Calculating Gallons of
Herbicide Per Acre

<u>Spray width from the nozzle</u>	<u>Calibration distance</u> (feet)	<u>Calculations</u>
5 ft. (5 ft.)	68	The number of ounces of water collected in the time to travel any of these distances equals the number of gallons applied per acre.
4 ft. 8 inches (4.7 ft.)	72	
4 ft. 4 inches (4.3 ft.)	79	
4 ft. (4 ft.)	85	
3 ft. 8 inches (3.7 ft.)	93	
3 ft. 4 inches (3.3 ft.)	102	
3 ft. (3 ft.)	113	

EXAMPLE:

The measured spray width was 4 feet.

1. The calibration distance (see table) for a 4-foot band is 85 feet.
2. Walking the 85 feet required 28 seconds.
3. The nozzle sprayed 14 ounces in 28 seconds; therefore, the sprayer is applying 14 gallons per acre.

CUT-SURFACE TREATMENTS

Tree injections, frill or girdle, and out-stump treatments are the commonly used cut surface treatments. These methods are generally used to eliminate larger cull-hardwoods from forest regeneration sites. They are still frequently used, especially in the mountains and by private nonindustrial landowners. Certainly an advantage for these methods is that very little equipment is required for application. A definite disadvantage is that when the larger overstory is removed, many of the small understory hardwoods and shrubs flourish, resulting in heavy competition on pine regeneration sites.

Some of the herbicides commonly used herbicides for injection in the South are 2,4-D amine, Garlon 3A, Tordon 101R, Tordon RTU and Roundup. Herbicides used on freshly cut stumps include 2,4-D amine, Garlon 3A, Tordon 101R, Tordon RTU, and Weedone CB. Always check the product label for labeled uses, hazards, directions, precautions, etc.

These methods can basically be used any time of the year. However, some herbicides work better during the growing season than do others. Roundup works best in the fall, but is not very effective on hickory. From December to the middle or latter part of January seems to be a poor application time in the South. Free-bleeding species such as red maple should not be treated during the spring sap rise; the sap may wash the herbicide from the cuts.

1. Tree Injection Method

Tree injection is most efficient on sites where target species are sparsely distributed and have stems greater than 2 inches d.b.h. Efficiency can be increased by utilizing a herbicide registered for wide spacing between each stem cut.

The usual methods of application employ a tubular tree injector (such as Jim-Gem and Cranco), a Hypo-Hatchet, or "Hack 'n' Squirt". One milliliter (1 ml) of the herbicide is usually applied to each cut with any of these methods..

The Tubular tree injector is a self-contained unit using a chisel type blade to cut through the tree bark and into the vascular system near the base of the tree. The unit is equipped with a handle or wire release which is pulled to deliver the herbicide (usually 1 ml) into the cut.

The Hypo Hatchet consists of a hatchet that contains a herbicide delivery system connected to a quart reservoir of herbicide which is carried on the belt. When the hatchet strikes the tree the blade penetrates to the sapwood and injects about 1 ml of the herbicide into the cut. Usually the injections are made "waist high" on the trees. **CAUTION:** All hose fittings must be checked to see if they are secure and no leak exists, and the hatchet must be well maintained, or the applicators will continually get the herbicide on themselves.

Safety glasses should always be worn; when the Hypo Hatchet strikes a tree, herbicide can splash into the eyes. The internal cylinder must be lubricated with the recommended lubricant for continued correct delivery.

Hack 'n' Squirt is a method that involves only the use of a hatchet and squirt bottle. The hatchet or ax is used to cut through the tree bark into the sapwood; the squirt bottle is then used to apply the herbicide into the cut. The squirt bottle usually holds 1 quart. A household squirt bottle may be used but is not durable. Most applicators prefer a commercial squirt bottle such as 1 quart WD-40 bottle from an automotive parts supplier. Safety glasses should be worn when using this method.

For application, a right-handed person should grasp the hatchet in the right hand and strike the tree about waist high, cutting through the bark into the sapwood. With the squirt bottle in the left hand, apply the herbicide to the cut when the hatchet is removed. A left-handed person would reverse the procedure.

2. Frill or Girdle Method

This method usually involves cutting through the tree into the sapwood with an ax or hatchet. Chips should not be removed, but should be left to help hold the herbicide in the cuts. Completely wet the cut surface with the herbicide using a squirt bottle or a small, pressurized spray unit.

3. Cut Stump Treatment

A. Freshly cut stumps

Stumps should be treated as soon after cutting as possible; a delay of more than 2 hours between cutting and herbicide treatment can reduce the effectiveness of the herbicide. A pressurized backpack sprayer is commonly used for this application. The cambial area, in about the outer 1 inch of the stump, must be thoroughly sprayed with the herbicide.



B. Older cut stumps

Fairly good success in treating stumps up to 5 months after cutting, such as in a firewood sale, has been achieved by using the thinline herbicide mixture. Spray mixture is applied to the outer 1-inch of the stump to the point of runoff (see page 2 for the thinline mixture.) Weedone CB has also been used to treat older stumps.

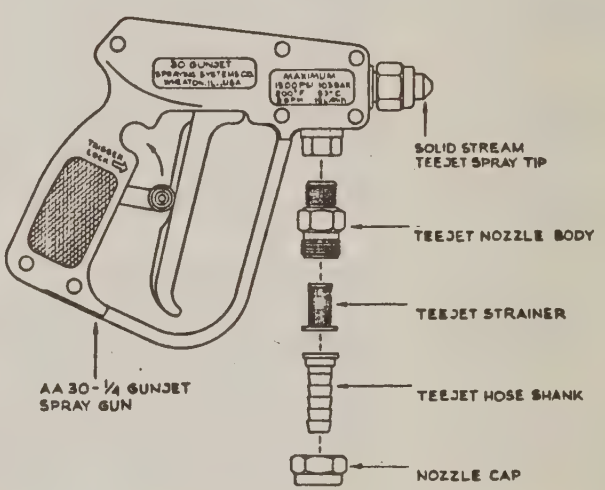
EQUIPMENT SOURCES

The Gunjet Kit 22995-30-1/4-VI may be purchased as a complete kit, including two tips as shown below from Spraying Systems' national office, regional offices, any spraying system dealer, or most forestry supplies dealers. John McVey at Spraying Systems regional office in St. Petersburg, Florida has been instrumental in developing these units. Therefore, he is familiar with them and can easily answer any technical questions. His address and phone number are shown on the data sheet below.

Part Name/No	List Price
Gunjet Kit 22995-30-1/4-VI	43.70
Spray Tips:	
TP 0001 for 1 ml. spots	1.39
TP 0002 for 2 ml. spots and Thinline	1.39
TP 0003 for 3 ml. spots	1.39
TP 1503 for full basal	1.39
TP 2503 for directed foliar spray	1.39
TP 08004LP	1.39
for herbaceous weed control	
TP 8004E	1.39
for herbaceous weed control, heavier spray edges	
Gunjet Repair Kit	11.58
(seals, o-rings, valve seat etc.)	

A 7/16 hose clamp is required to fasten the Gunjet to the backpack spray unit; secure from local auto parts supplier.

TEEJET TIPS	
ONE SPOT & THINLINE APPLICATIONS	
TP 0001	
TP 0002	



HERBICIDE HAND GUN APPLICATOR FOR USE IN SOIL SPOT, THINLINE BASAL BARK AND TREE STUMP TREATING APPLICATIONS.

DESCRIPTION

NO. 22995-30-1/4-VI

SPOT GUN APPLICATOR KIT

Southern Office:
Spraying Systems Co.
Attention: John McVey
P. O. Box 8187
St. Petersburg, FL 33738
Phone 813-393-4671

Spraying Systems Co.

Spray Nozzles and Accessories

North Avenue and Schmale Road, Wheaton, Illinois 60188

Ref :	Data Sheet No.
Revision No.	22995

© Spraying Systems Co. 1980

The backpack spray unit may be purchased from most forestry suppliers or spray equipment dealers.

PERSONAL SAFETY ITEMS

At the very least, the person applying herbicides should always wear clothing that is made of tightly woven cloth -- a long-sleeved shirt, long pants--and a hard hat with plastic liner. Waterproof boots should be worn, as specified by the label. If leather boots are worn, they should be water-proofed with a good sealant. Specific label requirements for protective clothing and equipment must be followed.

Wear clean clothing every day. As soon as you get home, take a shower and change clothes. Wash your work clothes every day -- separately, not in with your regular wash.

Before, during, and after herbicides are applied, clean wash-water should be available for the crew. Soap, towels, eyewash, gloves, and goggles or face shields must be ready, as required by the label. There should be a change of clothing available (throw-away coveralls like Tivex are good) for a quick change in case of contamination.

Safety Goggles or Faceshield - The eyes should be protected from splashing, so the goggles should have side shields; faceshields should provide side as well as forward protection. They should be vented or "fog-free" coated to prevent fogging. Both glasses and faceshields are available in clear or tinted materials.

Eyewash Bottles - should have an attached captive eye cup for washing the eye, meeting OSHA regulations. The commonly used size is a refillable 16 ounce unit, carried on the worker's belt in a 1 quart canvas canteen cover. There should be a minimum of 2 eyewash bottles per crew.

If a herbicide gets into your eyes (splashed, from spray, or from contaminated hands) wash it out with clean water at once for the length of time the label says. This is generally 10 to 15 minutes. Then have your eyes checked by a doctor.

If medical treatment is needed during herbicide application, take a copy of the label and safety data sheet for the doctor to read. The doctor needs to know that information.

Sources

Disposable **Coveralls** (Tivex) and unlined Waterproof **Gloves** are available from most forestry suppliers, safety equipment suppliers, etc.

Boot sealants such as mink oil and silicone are available from sporting goods suppliers, shoe and boot suppliers, etc.

Safety Goggles or Faceshield - Forestry suppliers, safety equipment suppliers, etc.

Eyewash Bottles - Sources are shown on next page.



Cole-Parmer Instrument Company

7425 North Oak Park Avenue
Chicago, Illinois 60648

call TOLL-FREE 1-800-323-4340

✓ b) Eyewash bottles

Polyethylene bottles meet OSHA regulation 1910.151. Fill bottle with demineralized sterile water. Captive snap-on cup lid keeps cup clean, ready for use. Drain tube stops contaminated wash from returning to bottle.

Perforated spray head provides gentle wash. Directions in English, German, Spanish and French. Bel-Art.

✓ R-6765-00 Eyewash bottle, 16 oz. \$4.60 ✓
R-6765-10 Eyewash bottle, 32 oz. \$4.90

Catalog 1985-86

Most hand crew members carry the 16-oz. bottle on their belt in a canteen cover.



Sources for the canvas canteen cover. This item is used to carry the 16-oz. eye wash bottle on the belts of the herbicide crew members.

Fire and Supply Equipment Catalog, NFFS, page 29.

Item No. 0054.

Canvas canteen cover, 1 quart.

GSA# 8465-00-118-4956

\$1.18 each.

State foresters may order through:

Fedstrip Process, or

USDA Forest Service Fire Ordering Process.

This cover may also be secured from some of the sporting goods suppliers.



CAUTION

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key — out of the reach of children and animals — and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, when honey bees or other pollinating insects are visiting plants, or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed them. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equipment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump, or crush and bury them in a level, isolated place.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the U.S. Environmental Protection Agency, consult your State forestry agency, county agricultural agent or State extension specialist to be sure the intended use is still registered.



NATIONAL AGRICULTURAL LIBRARY



1022259412

* NATIONAL AGRICULTURAL LIBRARY



1022259412